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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/497,421 02/07/00 CHAI

T 71711-2-8

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MM92/0703

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EXAMINER

CRUZ, J

ART UNIT

PAPER NUMBER

2815

DATE MAILED:

07/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/497,421	CHAI ET AL.	
	Examiner Lourdes C. Cruz	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

#### Status

- 1) Responsive to communication(s) filed on 4-19-01.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on 19 April 2001 is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - a) All b) Some \* c) None of the CERTIFIED copies of the priority documents have been:
    1. received.
    2. received in Application No. (Series Code / Serial Number) \_\_\_\_\_ .
    3. received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

#### Attachment(s)

15) <input type="checkbox"/> Notice of References Cited (PTO-892)	18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____
16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	20) <input type="checkbox"/> Other: _____

## DETAILED ACTION

This Office action is in response to an Application filed April 19, 2001.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitano et al. (U.S. Patent No. 4942452).

Kitano discloses a lead frame 1 with side bars defining an aperture 2 and a chip support zone (See protrusion on lead frame, Fig. 15-16), said zone being smaller than the chip and each side bar having an upper surface for engaging the chip.

Kitano also teaches:

Said chip supporting zone engaging the bottom of the chip a location remote from higher stress regions (**Claim 2**)

- Rectilinear side bars (Fig. 15)
- Curvilinear (**Claim 4**) side bars (Fig. 26)
- One or more aperture (**Claim 5**) traversing members (1a, Fig. 30)
- Leads 7, support members 3 (**Claims 6,8,9,11**) connected to the side bars
- Side bars intersecting (**Claim 7**) to define corners
- An inherently present (**Claim 10**) ground ring

- See Figs. 15-17 wherein Kitano teaches edges of the outer frame defined by the side bars being disposed within the outer chip edge  
**(Claim 12 and 13)**
- An apertured frame, (See Fig. 26) said frame being a generally circular frame **(Claim 14)**
- A chip supporting surface engaging the bottom of the chip at a location remote from higher stress regions associated with the chip  
**(Claim 15)**

Claims 1- 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo et al. (US 5661338).

Yoo discloses a lead frame 1 with side bars (See Fig. 3) defining an aperture S5 and a chip support zone said zone being smaller than the chip and each side bar having an upper surface for engaging the chip.

Yoo also teaches:

Said chip supporting zone engaging the bottom of the chip a location remote from higher stress regions **(Claim 2)**

- Rectilinear side bars
- Curvilinear **(Claim 4)** side bars (Fig. 2), See openings 5 under chip C
- One or more aperture **(Claim 5)** traversing members (a7-a10, Fig. 6)
- Leads 3, support members T **(Claims 6,8,9,11)** connected to the side bars

- Side bars intersecting (**Claim 7**) to define corners
- An inherently present (**Claim 10**) ground ring
- See Fig 2 wherein Yoo teaches edges of the outer frame defined by the side bars being disposed within the outer chip C edge (**Claim 12 and 13**)
- An apertured frame, said frame being a generally circular frame (**Claim 14**)
- A chip supporting surface engaging the bottom of the chip at a location remote from higher stress regions associated with the chip (**Claim 15**)

***Conclusion***

Applicant's arguments with respect to the previous Office Action mailed have been considered and were found persuasive. See new Office Action above. See that because of failure to positively define a chip there is no dimension relationship between the chip support zone and the chip.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitano, Mori, Sawada, Yasuhara, Yamaguchi, Kajihara, Terada, Okumura, and Ishikawa disclose lead frames with window openings to reduce the popcorn effect due to thermal strain.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 707-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-095690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz  
Examiner  
Art Unit 2815

  
Lourdes Cruz  
July 2, 2001

  
EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800